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## MANUFACTURES: 1909

## STATISTICS FOR THE MANUFACTURE OF OILCLOTH AND LINOLEUM.

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## INTRODUCTION.

This bulletin gives the statistics for the manufacture of oilcloth and linoleum for the calendar year 1909, as shown by the Thirteenth Census. It will be reprinted as a part of Volume X of the reports of the Thirteenth Census.

**Scope of census.**—Census statistics of manufactures are compiled primarily for the purpose of showing the absolute and relative magnitude of the different branches of industry covered and their growth or decline. Incidentally, the effort is made to present data throwing light upon character of ownership, size of establishments, and similar subjects. When use is made of the data for these purposes it is imperative that due attention should be given to the limitations of the statistics, particularly in any attempt to derive from them figures purporting to show average wages, cost of production, or profits. These limitations are fully discussed in the general report on manufactures for the United States as a whole (Volume VIII of Thirteenth Census Reports) and need not be repeated here.

The census did not cover establishments which were idle during the entire year or had a value of products of less than \$500, nor the manufacturing done in educational, eleemosynary, and penal institutions.

**Period covered.**—The returns relate to the calendar year 1909, or the business year which corresponded most nearly to that calendar year, and cover a year's operations, except for establishments which began or discontinued business during the year.

**The establishment.**—As a rule, the term "establishment" represents a single plant, but in some cases it represents two or more plants which were operated under a common ownership or for which one set of books of account was kept.

If, however, the plants constituting an establishment as thus defined were not all located within the same city or state, separate reports were secured in order that the figures for each plant might be included in the statistics for the city or state in which it was located. In some instances separate reports were secured for different industries carried on in the same establishment.

**Persons engaged in the industry.**—At the censuses of 1899, 1904, and 1909 the following general classes of persons engaged in manufacturing industries were distinguished: (1) Proprietors and firm members, (2) salaried officers of corporations, (3) superintendents and managers, (4) clerks (including other subordinate salaried employees), and (5) wage earners. In the reports for the censuses of 1904 and 1899 these five classes were shown according to the three main groups: (1) Proprietors and firm members, (2) salaried officials, clerks, etc., and (3) wage earners. The second group included the three classes of salaried officers of corporations, superintendents and managers, and clerks. In certain tables relating exclusively to the present census a somewhat different grouping is employed—that into (1) proprietors and officials, (2) clerks, and (3) wage earners, the first group including proprietors and firm members, salaried officers of corporations, and superintendents and managers. In comparative tables covering the censuses of 1899 and 1904 it is of course necessary to group the figures for 1909 according to the classification that was employed at the earlier censuses.

At this census the number of persons engaged in each industry, segregated by sex, and, in the case of wage earners, also by age (whether under 16 or 16 and over), was reported for December 15, or the nearest representative day. The 15th of December was selected as representing for most industries normal conditions of employment, but where conditions were exceptional and the December date could not be accepted as typical an earlier date had to be chosen.

In the case of employees other than wage earners the number thus reported on December 15, or other representative day, has been treated as equivalent to the average for the year, since the number of employees of this class does not ordinarily vary much from month to month. In the case of wage earners the average is obtained in the manner explained in the next paragraph.

In addition to the more detailed report by sex and age of the number of wage earners on December 15, or other representative day, a report was obtained of the number employed on the 15th of each month, without distinction of sex or age. From these figures the average number of wage earners for the year has been calculated by dividing the sum of the numbers reported for the several months by 12. The average thus obtained represents the number of wage earners that would be required to perform the work done if all were constantly employed during the entire year. Accordingly, the importance of the industry as an employer of labor is believed to be more accurately measured by this average than by the number employed at any one time or on a given day.

In 1899 and 1904 the schedule called for the average number of wage earners of each sex 16 years of age and over, and the average number under 16 years of age without distinction of sex, for each month, and these monthly statements were combined in an annual average. Comparatively few manufacturing concerns, however, keep their books in such way as to show readily the number of men, women, and children employed on the average each month. These monthly returns by sex and age were, in fact, largely estimates. It was believed that a more accurate and reliable sex and age distribution could be secured by taking as a basis of estimate the actual numbers employed on a single day. In 1899 the time the plant was in operation was used as a basis for computing the average number of employees, whether such time was the entire year or only a fraction of a year. These differences in method have but little effect upon the comparability of the statistics, however, except for certain seasonal industries like canning and preserving.

**Prevailing hours of labor.** The census made no attempt to ascertain the number of employees working a given number of hours per week. The inquiry called merely for the prevailing practice followed in each establishment. Occasional variations in hours in an establishment from one part of the year to another were disregarded, and no attention was paid to the fact that a limited number of employees might have hours differing from those of the majority. In the tables all the wage earners of each establishment are counted in the class within which the establishment itself falls. In most establishments, however, all or practically all the employees work the same number of hours, so that these figures give a substantially correct representation of the hours of labor.

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**Capital.**—For reasons stated in the general report on manufactures for the United States as a whole (Volume VIII of Thirteenth Census Reports), the statistics of capital secured by the census canvass are so defective as to be of little value, except as indicating very general conditions. The instructions on the schedule for securing data relating to capital were as follows:

The answer should show the total amount of capital, both owned and borrowed, on the last day of the business year reported. All the items of fixed and live capital may be taken at the amounts carried on the books. If land or buildings are rented, that fact should be stated and no value given. If a part of the land or buildings is owned, the remainder being rented, that fact should be so stated and only the value of the owned property given. Do not include securities and loans representing investments in other enterprises.

**Materials.**—The statistics as to cost of materials relate to the materials used during the year, which may be more or less than the materials purchased during the year. The term "materials" includes fuel, rent of power and heat, mill supplies, and containers, as well as materials forming a constituent part of the product.

**Expenses.** Under "Expenses" are included all items of expense incident to the year's business, except interest, whether on bonds or other forms of indebtedness, and allowances for depreciation.

**Value of products.**—The amounts given under this heading represent the selling value or price at the works of all products manufactured during the year, which may differ from the value of the products sold.

**Value added by manufacture.**—The value of products is not a satisfactory measure of either the absolute or the relative importance of a given industry, because only a part of this value is actually created by the manufacturing processes carried on in the industry itself. Another part of it, and often by far the larger part, represents the value of the materials used. For many purposes, therefore, the best measure of the importance of an industry is the value created by the manufacturing operations carried on within the industry. This value is obtained by deducting the cost of the materials used from the value of the products. The figure thus obtained is termed in the census reports "value added by manufacture."

**Cost of manufacture and profits.**—Census data do not show the entire cost of manufacture, and consequently can not be used to show profits. No account has been taken of interest or depreciation. Even if the amount of profit could be determined by deducting the expenses from the value of the products, the rate of return on the investment could not properly be calculated, because of the very defective character of the figures regarding capital.

**Primary horsepower.**—This item represents the total primary power generated by the manufacturing establishments plus the amount of power, principally electric, rented by them from other concerns. It does not cover the electric power developed by the primary power of the establishments themselves, the inclusion of which would evidently result in duplication.

# THE OILCLOTH AND LINOLEUM INDUSTRY.

## GENERAL STATISTICS.

**Scope of the industry.**—This industry embraces establishments engaged primarily in the manufacture of floor coverings of oilcloth and linoleum (including cork carpet) and of enameled oilcloth, including table, shelf, and upholsters' oilcloth, etc. Some of the establishments in the industry also manufacture buckram and burlap wall coverings, which are included under "all other products" in Table 9. Establishments which manufacture opaque window shade cloth, however, are not included. The report also takes cognizance of establishments manufacturing artificial leather (included with "upholstering materials" in 1909), to the extent of including in Table 9, but not elsewhere, statistics of the quantity and value of this product, which is closely allied to oilcloth and linoleum in composition.

In reports of previous censuses the statistics for the industry have been published separately under two classifications, "oilcloth, enameled," and "oilcloth and linoleum, floor," but at the present census, because of the overlapping of the statistics, the two classifications have been combined under the designation "oilcloth and linoleum."

**Summary for the two branches of the industry.**—Table 1 presents statistics for the oilcloth and linoleum

industry as a whole and for its two branches separately for 1909.

**Table 1**

ESTABLISHMENTS MANUFACTURING PRIMARILY	Number of establishments	Wage-earners (average number)	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
<b>Total</b>	<b>31</b>	<b>5,201</b>	<b>\$2,825,545</b>	<b>\$15,550,101</b>	<b>\$23,339,022</b>	<b>\$7,788,921</b>
Oilcloth and linoleum, floor	19	4,225	2,309,404	10,145,316	15,813,331	5,668,015
Oilcloth, enameled	12	976	516,141	5,404,785	7,525,691	2,120,906

The oilcloth and linoleum branch of the industry contributed 67.8 per cent of the total value of products reported for the industry as a whole and 72.7 per cent of the value added by manufacture. Of the total number of wage earners, 81.2 per cent were reported by the floor oilcloth and linoleum branch.

**Comparison with earlier censuses.**—Table 2 summarizes the statistics for the manufacture of oilcloth and linoleum as reported at each census from 1869 to 1909, inclusive. The financial figures for 1869 are given in currency, which at that time was worth only about 80 cents, gold, to the dollar. For strict comparison, therefore, these figures should be reduced about 20 per cent.

**Table 2**

	NUMBER OR AMOUNT				PER CENT OF INCREASE							
	1909	1904	1899	1889	1879	1869	1899-1909	1904-1909	1899-1904	1889-1899	1879-1889	1869-1879
Number of establishments	31	27	27	28	29	74	14.8	14.8	—3.6	—3.4	—14.7	
Persons engaged in the industry	5,557	4,112	3,409	(1)	(1)	(1)	63.0	55.1	20.6			
Proprietors and firm members	11	12	26	(2)	(2)	(1)	—57.7	—8.3	—53.8			
Salaries of employees	345	217	153	(1)	(1)	(2)	125.5	59.0	41.8			
Wage-earners (average number)	5,201	3,882	3,290	1,842	1,796	1,411	61.0	33.9	29.2	73.5	(3)	(4)
Primary horsepower	16,125	10,112	7,561	2,669	(1)	124	113.3	59.5	33.7	188.3		
Capital	\$19,634,138	\$13,803,232	\$8,879,162	\$4,477,256	\$3,744,550	\$2,247,000	121.1	42.2	55.5	98.3	19.6	67.4
Expenses	20,800,264	13,724,544	9,904,265	4,676,936	(1)	(1)	108.7	52.0	57.3	113.7		
Services	3,474,628	2,304,987	1,922,436	1,050,139	849,862	687,288	80.7	50.7	19.9	81.0	23.6	23.7
Salaries	610,083	361,230	294,523	(1)	(1)	(2)	120.4	79.7	22.6			
Wages	2,825,545	1,943,757	1,628,113	(1)	(1)	(1)	73.5	35.4	19.4			
Materials	15,550,101	10,650,099	7,549,672	3,363,813	3,982,908	2,548,768	106.0	54.7	33.1	124.4	—15.5	56.3
Miscellaneous	1,835,335	1,398,545	521,957	262,003	(1)	(1)	251.7	34.0	162.4	98.7		
Value of products	23,339,022	14,792,246	11,402,620	5,481,087	4,214,579	104.7	57.8	29.7	108.0	—5.7	38.1	
Value added by manufacture (value of products less cost of materials)	7,788,921	4,742,237	3,852,948	2,117,274	1,831,679	1,662,841	102.2	64.2	23.1	82.0	15.6	10.2

<sup>1</sup> A minus sign (—) denotes decrease. Where percentages are omitted comparable figures are not available.

<sup>2</sup> Figures not strictly comparable.

<sup>3</sup> Comparable figures not available.

The manufacture of oilcloth in the United States commenced about 1807. Statistics for the industry first appeared in the census reports for 1810, when 1 establishment in Philadelphia was reported as engaged in "floor cloth stamping." Its product was given as 1,500 yards, valued at \$3,000. At the census of 1849, 56 establishments were reported, with 650 wage earners and products valued at \$1,256,994.

The census of 1859 showed 49 establishments, with 1,538 wage earners and products valued at \$3,602,216.

The industry has shown continuous and substantial increases for the entire period covered by Table 2, with the single exception of the decade 1879-1889, when slight decreases appeared in several of the principal items shown. The value of products for 1909 was more than five times that in 1869, and the

number of wage earners increased 268.6 per cent between those years. The value of products and cost of materials more than doubled during the decade 1899-1909, the percentage of increase in each case being slightly less than during the preceding decade. The number of wage earners increased 61 per cent and the amount paid in wages 73.5 per cent from 1899 to 1909. Salaried employees were included to some extent with wage earners at the earlier censuses, and comparative figures for this class, therefore, are not shown for censuses prior to that of 1899.

The value of products of establishments engaged in manufacturing oilcloth and linoleum in 1909 was \$23,339,022, two-thirds of which (\$15,550,101) represented the cost of materials. The value added by manufacture (value of products less cost of materials) was, therefore, \$7,788,921.

**Summary, by states.**—Detailed statistics for 1909 are given for each state in the industry in Table 11, so far as figures can be presented without disclosing individual operations. New Jersey was the leading state in the industry in 1909, reporting 40.8 per cent of the total number of wage earners and 43.5 per cent of the total value of products. Pennsylvania ranked second in value of products; figures for this state can not be given, however, without disclosing individual operations. New York ranked third in value of products in 1909, reporting 15.1 per cent of the total value of products and 21.2 per cent of the total number of wage earners.

**Persons engaged in the industry.**—Table 3 shows, for 1909, the number of persons engaged in the industry classified according to occupational status and sex, and in the case of wage earners, according to age also. It should be borne in mind that the sex and age classification of the wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.		
	Total.	Male.	Female.
<b>All classes.</b> .....	5,557	5,345	212
Proprietors and officials.....	111	110	1
Proprietors and firm members.....	11	10	1
Salaried officers of corporations.....	48	48	
Superintendents and managers.....	52	52	
Clerks.....	245	191	54
Wage earners (average number).....	5,201	5,044	157
16 years of age and over.....	5,154	4,997	157
Under 16 years.....	47	47	

The average number of persons engaged in the industry during 1909 was 5,557, of whom 93.6 per cent were wage earners, 2 per cent proprietors and officials, and 4.4 per cent clerks, this class including other subordinate salaried employees. Of the total number of persons engaged in the industry, 5,345, or 96.2 per cent, were males. The number of children reported as wage earners was only 47.

In order to compare the distribution of the persons engaged in the industry in 1909 according to occupational status with that in 1904 it is necessary to use the classification employed at the earlier census. (See Introduction.) Such a comparison is made in Table 4.

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.				
	1909		1904		Per cent of increase: 1904-1909
	Number.	Per cent distribution.	Number.	Per cent distribution.	
<b>Total</b> .....	5,557	100.0	4,112	100.0	35.1
Proprietors and firm members.....	11	0.2	12	0.3	
Salaried employees.....	345	6.2	217	5.3	59.0
Wage earners (average number).....	5,201	93.6	3,883	94.4	33.9

**Wage earners employed, by months.**—Table 5 gives the number of wage earners employed in the oilcloth and linoleum industry on the 15th (or nearest representative day) of each month during the year 1909.

MONTH.	WAGE EARNERS IN THE INDUSTRY: 1909	
	Number.	Per cent of maximum.
January.....	5,083	93.5
February.....	5,110	94.0
March.....	5,100	93.8
April.....	5,057	93.0
May.....	5,133	94.4
June.....	5,158	94.9
July.....	5,119	95.1
August.....	5,221	96.1
September.....	5,282	97.2
October.....	5,371	98.5
November.....	5,321	97.9
December.....	5,435	100.0

In the industry as a whole the largest number of wage earners employed during any month of 1909 was 5,435 in December, and the smallest number, 5,057, in April, the minimum number being equal to 93 per cent of the maximum. In 1904 the maximum number, 3,953, was shown for August, and the minimum number, 3,780, for November, the minimum number being equal to 95.6 per cent of the former.

**Prevailing hours of labor.**—In Table 6 the wage earners in the oilcloth and linoleum industry have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours.

PREVAILING HOURS OF LABOR PER WEEK.	WAGE EARNERS IN THE INDUSTRY: 1909	
	Average number.	Per cent of total.
<b>Total</b> .....	5,201	100.0
48 and under.....	14	0.3
Between 48 and 54.....	16	0.3
54.....	870	7.1
Between 54 and 60.....	2,674	39.9
60.....	2,727	52.4

Of the 5,201 wage earners reported for 1909, 2,727, or 52.4 per cent, were employed in establishments where the prevailing hours of labor were 60 per week; 2,074, or 39.9 per cent, in establishments where the prevailing hours were between 54 and 60 per week; and 400, or 7.7 per cent, in establishments where the prevailing hours were 54 or less than 54 per week.

**Character of ownership.**—Table 7 presents statistics with respect to the character of ownership of the establishments engaged in the oilcloth and linoleum industry.

Table 7 CHARACTER OF OWNERSHIP.	NUMBER OF ESTABLISHMENTS		VALUE OF PRODUCTS.	
	1909	1901	1909	1901
Total.....	31	27	\$23,339,022	\$14,792,246
Individual.....	2	3	135,150	135,150
Firm.....	3	3	1,906,044	1,082,449
Corporation.....	26	21	22,432,978	13,574,607
Per cent of total..	100.0	100.0	100.0	100.0
Individual.....	6.5	11.1	0.6	0.9
Firm.....	9.7	11.1	8.2	7.3
Corporation.....	83.9	77.8	91.2	91.8

<sup>1</sup> Includes two establishments under individual ownership, to avoid disclosure of individual operations.

<sup>2</sup> Includes one establishment under firm ownership, to avoid disclosure of individual operations.

Establishments under corporate ownership increased both absolutely and relatively in number and in value of products during the five-year period 1904 to 1909.

**Size of establishments.**—The average size of the establishments in this industry, as measured by value of products, is larger than in most other industries. Eight establishments reported a value of products in excess of \$1,000,000; nineteen, a value of products of \$100,000 but less than \$1,000,000; and four a value of products of \$20,000 but less than \$100,000. The average value of products per establishment, as computed from figures in Table 2, increased from \$422,319 in 1899 to \$752,872 in 1909, and the value added by manufacture advanced from \$142,702 to \$251,256 during the same period. The average number of wage earners per establishment increased from 119.6 in 1899 to 168 in 1909.

**Expenses.**—As stated in the Introduction, the census statistics representing expenses do not purport to show the total cost of manufacture, since they take no account of interest or depreciation; hence they can not properly be used for determining profits. Facts of interest can be brought out, however, concerning the relative importance of the different classes of expenses which were reported. Table 2 shows the total expenses in the oilcloth and linoleum industry in 1909 to have been \$20,860,264, distributed as fol-

lows: Cost of materials, \$15,550,101, or 74.5 per cent; wages, \$2,825,545, or 13.5 per cent; salaries, \$649,083, or 3.1 per cent; and miscellaneous expenses, made up of advertising, ordinary repairs of buildings and machinery, insurance, traveling expenses, and other sundry expenses, \$1,835,535, or 8.8 per cent. There were considerable variations in the proportions of the total reported expenses represented by the various classes in the several states, due largely to differences in the grades of oilcloth and linoleum manufactured. In the four principal states in the industry, as shown in Table 11, the cost of materials ranged from 82 per cent of the total expenses in Massachusetts to 69.8 per cent in New York.

**Engines and power.**—The amount of power used in the industry was first reported at the census of 1869. Table 2 shows that the total power used increased from 424 horsepower in 1869 to 16,125 in 1909. Table 8 shows the statistics of power as reported at the censuses of 1909, 1904, and 1899.

Table 8 POWER.	NUMBER OF ENGINES OR MOTORS.						PER CENT DISTRIBUTION OF HORSEPOWER.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899
Primary power, total.....	223	156	117	16,125	10,112	7,561	100.0	100.0	100.0
Owned.....	175	148	117	15,048	9,084	7,561	93.3	98.7	100.0
Steam.....	174	146	117	15,046	9,083	7,561	93.3	97.2	98.7
Gas.....	1	2	(1)	2	47	(1)	(1)	0.5	...
Other.....	...	...	...	...	105	100	...	1.0	1.3
Rented.....	48	8	(1)	1,077	128	(1)	6.7	1.3	...
Electric.....	48	8	(1)	1,002	93	(1)	6.2	0.9	...
Other.....	...	...	...	75	35	...	0.5	0.3	...
Electric motors.....	336	125	75	4,540	1,275	718	100.0	100.0	100.0
Run by current generated by establishment.....	288	117	75	3,538	1,182	718	77.9	92.7	100.0
Run by rented power.....	48	8	(1)	1,002	93	(1)	22.1	7.3	...

<sup>1</sup> Not reported.

<sup>2</sup> Less than one-tenth of 1 per cent.

The total primary power used in the oilcloth and linoleum industry increased from 7,561 horsepower in 1899 to 16,125 horsepower in 1909, or 113.3 per cent. Steam power formed the major part of the primary power employed in the industry, though the proportion which it formed of the total primary power decreased from 98.7 per cent in 1899 to 93.3 per cent in 1909. Rented electric power increased from 93 horsepower in 1904 to 1,002 horsepower in 1909. This class of power was not reported for the industry in 1899. The horsepower of electric motors run by current generated in the establishments in the industry was nearly five times as great in 1909 as in 1899.

## SPECIAL STATISTICS RELATING TO PRODUCTS.

**Summary for the United States.**—Table 9 shows the quantity and value of the different kinds of oilcloth and linoleum manufactured in 1909 and 1904 by establishments in the industry, and also the quantity and value of the artificial leather produced in 1909.

Table 9	PRODUCT	1909	1904
	<b>Total value.</b>	<b>\$26,253,796</b>	<b>\$14,792,246</b>
	<b>Oilcloth.</b>	<b>\$11,681,012</b>	<b>\$8,618,337</b>
	Floor—		
	Square yards	18,354,831	21,456,615
	Value	\$4,776,660	\$7,965,689
	Enameled		
	Square yards	17,328,440	11,574,986
	Value	\$2,265,116	\$1,542,467
	Table—		
	Square yards	61,108,777	38,926,083
	Value	\$5,639,296	\$3,540,181
	<b>Linoleum.</b>	<b>\$10,841,928</b>	<b>\$5,328,800</b>
	Linoleum, including cork carpet		
	Square yards	26,215,979	14,765,284
	Value	\$7,830,437	\$4,255,902
	Inlaid linoleum		
	Square yards	4,460,275	2,126,178
	Value	\$2,394,491	\$1,104,808
	<b>Artificial leather.</b>		
	Square yards	11,899,875	(2)
	Value	\$3,448,617	(2)
	All other products	\$279,239	\$845,109

<sup>1</sup> In addition, products to the value of \$83,328 were reported by establishments engaged primarily in the manufacture of products other than those covered by the industry designation. The production of artificial leather is included under "upholstering materials" in the general reports.

<sup>2</sup> Figures not available.

Each of the varieties of oilcloth and linoleum shows a considerable percentage of increase in quantity and value except floor oilcloth, the output of which decreased 14.5 per cent in quantity, although its value increased 5.9 per cent. The decrease in the output of floor oilcloth is explained by the increased degree to which linoleum has been substituted for it as a floor covering. Inlaid linoleum shows the largest percentages of gain of any of the products of the industry during the five-year period, 109.8 per cent in output and 171 per cent in value. The output of table oilcloth, the most important of the oilcloth products in 1909, increased 60.9 per cent and its value 59.3 per cent between 1904 and 1909.

Floor oilcloth, which was the principal kind of oilcloth manufactured in 1904, representing 41.2 per cent of the total value of oilcloth produced, contributed only 32.3 per cent of the total value in 1909. The proportion of the total value represented by table oilcloth, on the other hand, increased from 40.9 per cent in 1904 to 48.3 per cent in 1909, and the proportion represented by enameled oilcloth from 17.8 per cent in the earlier year to 19.4 per cent in the later year.

In 1909 the value of linoleum represented 48.1 per cent of the total value of the combined value of oilcloth and linoleum, as compared with 38.1 per cent in 1904. "Linoleum, including cork carpet," represented 72.1 per cent of the total value of linoleum produced in 1909, as compared with 79.3 per cent in 1904.

The manufacture of artificial leather is so closely allied to the oilcloth industry that the quantity and value of this product has been included for 1909 in the preceding table. The total value of products as shown in Table 9 is not comparable with the total for 1904, since the value of artificial leather was not included at the former census. Artificial leather, although used to some extent in bookbinding, is used principally in the upholstering trade, and the reports for the manufacture of this product were included with those for the industry designated "upholstering materials" in the general census reports of 1909.

A detailed statement of the different products can not be given for any individual state except New Jersey without disclosing the operations of individual establishments. New Jersey was the leading state in the industry both in 1909 and 1904. The total value of products of the oilcloth and linoleum industry, including artificial leather, for this state in 1909 was \$11,519,680, which constituted 43.9 per cent of the total value for the United States. Linoleum represented more than half (57.5 per cent) of the total value of the products of the industry for the state, its value, \$5,834,338, being 53.8 per cent of the total value of linoleum for the United States. Of the total value of the different varieties of linoleum manufactured by the establishments in New Jersey in 1909, inlaid linoleum constituted 22.5 per cent and "linoleum, including cork carpet," 77.5 per cent. The proportion which the value of the different varieties of oilcloth constituted of the total value of oilcloth produced in the state was as follows: Floor oilcloth, 34.4 per cent; enameled oilcloth, 28.2 per cent; and table oilcloth, 37.4 per cent. The value of artificial leather manufactured in New Jersey in 1909 was \$1,377,084, or 39.9 per cent of the total for the United States.

**Exports and imports.**—Table 10 gives the amount and value of the imports and the value of the exports of oilcloth and linoleum from 1898 to 1910, inclusive, as compiled from the reports of the Bureau of Foreign and Domestic Commerce, Department of Commerce.

Table 10	YEAR ENDING JUNE 30—	IMPORTS		Exports (Value).
		Square yards.	Value.	
1910.....		4,848,615	\$1,834,640	\$482,086
1909.....		5,306,329	1,894,810	359,764
1908.....		6,114,568	2,102,313	359,801
1907.....		7,109,067	2,313,772	353,808
1906.....		5,470,460	1,744,539	286,577
1905.....		3,508,855	1,250,372	269,929
1904.....		3,324,534	1,201,070	231,267
1903.....		3,358,655	1,165,894	221,417
1902.....		1,824,579	681,464	189,291
1901.....		1,306,222	532,255	172,635
1900.....		832,465	407,008	141,917
1899.....		416,658	216,210	132,532
1898.....		(1)	(1)	118,641

<sup>1</sup> Not reported separately prior to 1899.



The statistics of imports and exports in the reports of the Bureau of Foreign and Domestic Commerce do not make a clear distinction between cotton oilcloth and other cotton cloths; therefore, only the imports of floor oilcloth and linoleum are included in Table 10. The exports, however, include the statistics for all classes of oilcloth.

In 1899 the imports of oilcloth and linoleum amounted to only 416,658 square yards, valued at

\$216,210, but increased steadily from year to year until 1907, when 7,109,067 square yards, valued at \$2,313,772, were reported. From 1907 to 1910 the imports decreased to 4,848,615 square yards, valued at \$1,834,640.

The value of the exports of oilcloths has also increased with each successive year, with the single exception that there was a decrease in 1909 as compared with 1908.

#### DETAILED STATE TABLE.

The principal statistics secured by the census concerning the oilcloth and linoleum industry are presented, by states, in Table 11, which gives detailed statistics for 1909 concerning the number of establish-

ments, number of persons engaged in the industry, wage earners on December 15, or the nearest representative day, primary horsepower, capital, expenses, value of products, and value added by manufacture.

#### OILCLOTH AND LINOLEUM DETAILED STATISTICS, BY STATES: 1909.

Table 11		PERSONS ENGAGED IN INDUSTRY										WAGE EARNERS, DEC. 15, OR NEAREST REPRESENTATIVE DAY					
STATE.	Number of establishments.	Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.			Wage earners.			Grand over.		Under 16.		Primary horsepower.		
					Male.	Female.	Average number.	Number, 15th day of		Total.	Male.	Female.	Male.	Female.			
								Maximum month.	Minimum month.								
United States.....	31	5,557	11	100	191	54	5,201	De	5,435	Ap	5,057	5,541	5,324	167	50	16,125	
Massachusetts.....	3	239		8	8	3	220	Ap	224	Ja	211	226	186	40		375	
Michigan.....	3	59		8	10	2	39	Ar	42	Ap	37	41	41			210	
New Jersey.....	10	2,264	6	32	74	30	2,123	De	2,230	Ar	2,035	2,294	2,247	16	31	7,439	
New York.....	4	1,153	2	15	28	6	1,102	De	1,173	Ar	1,037	1,173	1,070	103		2,384	
All other states <sup>2</sup> .....	11	1,842	3	37	72	13	1,717					1,807	1,780	8	19	5,337	
STATE.	Capital.	EXPENSES.										Value added by manufacture (value of products less cost of materials).					
		Total.	Services.			Materials.			Miscellaneous.								
			Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including municipal revenue.	Contract work.	Other.						
United States.....	\$19,634,138	\$20,860,264	\$380,585	\$268,498	\$2,825,545	\$525,740	\$15,024,361	\$5,772	\$68,677	\$27,645	\$1,733,441	\$23,339,022	\$7,788,921				
Massachusetts.....	688,617	1,476,150	29,598	12,316	117,764	12,571	1,197,947	2,760	4,912		97,753	1,704,470	493,950				
Michigan.....	137,418	227,280	14,400	6,255	26,133	4,720	156,025	1,800	1,100		16,836	256,159	95,414				
New Jersey.....	8,169,744	8,819,919	96,003	97,344	1,187,248	237,217	6,400,777		32,650	4,207	784,481	10,142,596	3,504,602				
New York.....	2,901,569	3,104,373	71,114	42,316	570,630	83,430	2,082,131		11,809		242,833	3,521,689	1,356,128				
All other states <sup>2</sup> .....	7,736,790	7,212,530	169,470	169,777	923,770	187,800	5,187,481	1,212	18,086	23,438	390,496	7,714,108	2,338,827				

<sup>1</sup> Same number reported for one or more other months.

<sup>2</sup> All other states embrace: Illinois, 1 establishment; Indiana, 1; Maine, 2; Minnesota, 1; Ohio, 3; Pennsylvania, 3.





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